Resolution

Bug 1: Incorrect fine levied

The negative fine amount was fixed after updating the number of milliseconds in a day in the calendar class.

When the application is tested with the new figure, the correct amount for the fine is displayed.

```
Choice : r
Return Book Use Case UI
26/10/2020

Scan Book (<enter> completes): 2
days overdue: 1
Inspecting
Book: 2
  Title:  celtics
  Author: rajon rondo
  CallNo: 123
  State:  ON_LOAN
Loan:  20
  Borrower 2 : Ralph, Lauren
  Book 2 : celtics
  DueDate: 25/10/2020
  State: OVER_DUE

Overdue fine : $1.00
```

Bug 2: Incorrect fine amount levied.

The incorrect fine amount levied has been fixed by updating the number of milliseconds in a day in the Calendar class.

When the application is tested with the new figure, the correct amount for the fine is displayed.

```
Choice : r
Return Book Use Case UI
28/10/2020

Scan Book (<enter> completes): 2
days overdue: 6
Inspecting
Book: 2
   Title:  celtics
   Author: rajon rondo
   CallNo: 123
   State:  ON_LOAN
Loan:   18
   Borrower 1 : Doe, John
   Book 2 : celtics
   DueDate: 22/10/2020
   State: OVER_DUE

Overdue fine : $6.00
```

From the screenshot above, the days overdue is six and the fine amount is 6 instead of 3.

Bug 3: Incorrect state of a loan

The status of the loan has been fixed by making sure the date is checked for both conditions of the loan. The following screenshots shows how the bug has been eliminated.

```
Choice : ll

Loan:   19
   Borrower 2 : Ralph, Lauren
   Book 2 : celtics
   DueDate: 22/10/2020
   State: CURRENT



20/10/2020
```

Current loan with a due date of 22.

```
Choice : t
Enter number of days: 5
25/10/2020

25/10/2020
```

Incrementing the date by 5.

```
Choice : ll

Loan:  19
   Borrower 2 : Ralph, Lauren
   Book 2 : celtics
   DueDate: 22/10/2020
   State: OVER_DUE


 25/10/2020
```

The loan becomes overdue.

```
Choice : t
Enter number of days: -5
20/10/2020

20/10/2020
```

Decrementing the date by 5 to go back to the original date.

```
Choice : ll

Loan:  19
   Borrower 2 : Ralph, Lauren
   Book 2 : celtics
   DueDate: 22/10/2020
   State: CURRENT


 20/10/2020
```

Bug 4: Incorrect patron status

The bug has been fixed by changing the max fines owed to 0 such that the user has to clear all the fines before the status changes to CAN_BORROW.

```
Choice : p
Pay Fine Use Case UI

Swipe patron card (press <enter> to cancel): 1
Patron:  1
   Name:  Doe, John
   Email: johnDoe@mail.com
   Phone: 12345
   Fines Owed :  $12.00
   State: RESTRICTED

Enter amount (<Enter> cancels) : 11
Patron:  1
   Name:  Doe, John
   Email: johnDoe@mail.com
   Phone: 12345
   Fines Owed :  $1.00
   State: RESTRICTED

Pay Fine process complete

28/10/2020
```
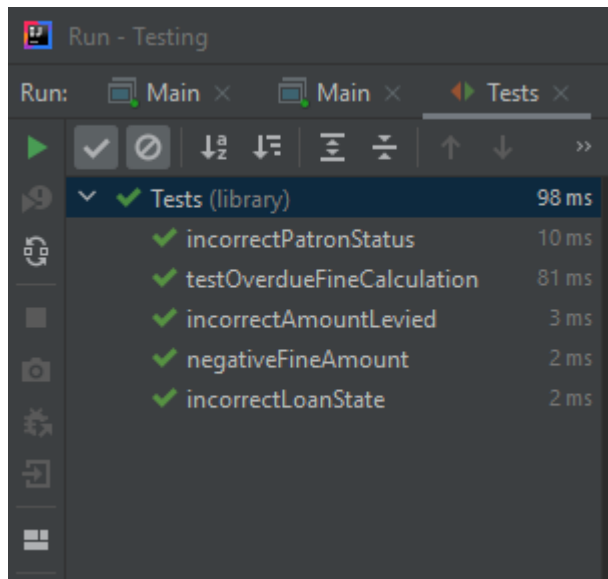
Bug 5: Negative fine amount

The negative fine bug has been eliminated by making sure the date is checked for both conditions of the loan

```
Swipe patron card (press <enter> to cancel): 1
Patron:  1
   Name:  Doe, John
   Email: johnDoe@mail.com
   Phone: 12345
   Fines Owed :  $1.00
   State: RESTRICTED
```

Automated tests

Running all the tests written in the simplification step results to a pass for all the test cases as shown below;

Version control link
https://github.com/evoclub21/Testing